

Nursing staff care to patients who suffered burns**Cuidados realizados pela equipe de enfermagem aos pacientes que sofreram queimaduras****Cuidados realizados por el equipo de enfermería a los pacientes que sufrieron quemaduras****Received: 23/12/2016****Approved: 14/03/2017****Published: 31/10/2017****Isabela Lacerda Rodrigues da Cunha¹****Lúcia Aparecida Ferreira²****José Henrique da Silva Cunha³**

The objective of this study was to describe and analyze offered by nursing professionals to burned patients. This is a descriptive, qualitative study, developed with nurses and nursing technicians of the General Hospital of the Federal University of the Triângulo Mineiro, Uberaba, MG, Brazil, from January to March, 2016. Data were collected through a semi-structured interview script and analyzed via thematic content analysis. Data analysis enabled the appearance of four categories: a) general care with the patient; b) humanization of care; c) knowledge of nursing professionals during the bath; d) knowledge of nursing professionals during the dressing of injuries. It is necessary to emphasize how important it is for nurses to maintain themselves updated and aware of current with scientific knowledge, in order to provide a more adequate assistance to patients.

Descriptors: Burns; Nursing; Nursing care.

O objetivo deste estudo foi descrever e analisar a assistência de profissionais de enfermagem no cuidado aos pacientes que sofreram queimaduras. Trata-se de um estudo descritivo com abordagem qualitativa, desenvolvido com enfermeiros e técnicos de enfermagem do Hospital de Clínicas da Universidade Federal do Triângulo Mineiro no período de janeiro a março de 2016. Os dados foram coletados por meio de um roteiro de entrevista semiestruturado e analisados pela análise de conteúdo do tipo temática. A análise dos dados possibilitou o surgimento de quatro categorias: a) Humanização do cuidado; b) Conhecimento dos profissionais de enfermagem durante o banho; c) Conhecimento dos profissionais de enfermagem durante o curativo; d) Cuidados gerais com o paciente. Enfatiza-se a importância do enfermeiro se atualizar e de buscar conhecimento científico, com vistasa uma assistência mais adequada aos pacientes.

Descritores: Queimaduras; Enfermagem; Cuidados de enfermagem.

El objetivo de este estudio fue describir y analizar la asistencia de profesionales de enfermería en el cuidado a los pacientes que sufrieron quemaduras. Se trata de un estudio descriptivo con abordaje cualitativo, desarrollado con enfermeros y técnicos de enfermería del Hospital de Clínicas de la Universidad Federal do Triângulo Mineiro, Uberaba, MG, Brasil, en el periodo de enero a marzo de 2016. Los datos fueron colectados por medio de un gui3n de entrevista semiestruturado y revisados por el análisis de contenido del tipo temático. El análisis de los datos posibilitó el surgimiento de cuatro categorías: a) Humanización del cuidado; b) Conocimiento de los profesionales de enfermería durante el baño; c) Conocimiento de los profesionales de enfermería durante el curativo; d) Cuidados generales con el paciente. Se enfatiza la importancia de que el enfermero se actualice y busque conocimiento científico, con el objetivo de una asistencia más adecuada a los pacientes.

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Descritores: Quemaduras; Enfermería; Atención de enfermería.

INTRODUCTION

The skin, considered to be the largest organ of the human body, is responsible for important functions, such as controlling body water loss, thermal adjustment, protection against external agents and body protection against friction. Moreover, it acts as a protective barrier against the chemical, physical or bacterial agents. It consists of two layers: the epidermis and the dermis¹.

This organ may be affected by burns, which are lesions caused by external agents, such as chemical, thermal and/or electrical ones, generating partial or total destruction of the skin². The burn is one of the most severe forms of trauma involving children and adults, and represents the fourth largest cause of death in the United States and the fifth cause of accidental deaths in the world. In Brazil, it is estimated that 1 million of individuals get burned each year. Data about the precise number, however, is not adequately reported³.

Burns can be classified as 1st degree, 2nd degree and 3rd degree. The first-degree only affects the epidermis. Usually its healing occurs within a week and does not normally have systemic repercussions. Second degree burns reach the epidermis and the dermis, and blisters are formed. Third-grade burns, on the other hand, harm all the layers of the skin⁴.

The main cause of death of people with extensive burns are infections and sepsis, due to changes in the skin structured caused by its protective layers, leading to a high number of bacterial colonization, the use of catheters, tubes and invasive monitoring devices⁵. Thus, nursing care provided to the person with burns is complex, requiring technical-scientific knowledge to base the practice.

This study was conducted at the clinics Hospital of the Federal University of the Triangle Miner (HC-UFTM) by being reference to 27 municipalities that composes the macro of the South Triangle. People who have suffered burns are cared for and adequately referred. The hospital that housed this research has a high number of burned case treatments.

The objective of this study was to describe and analyze offered by nursing professionals to burned patients.

METHOD

This is a descriptive, exploratory and qualitative study, developed with nurses and nursing technicians of the general hospital of the Federal University of the Triângulo Mineiro (GH-UFTM), in the city of Uberaba-MG, Brazil.

The inclusion criteria for their participants were that they worked as a nurse or nursing technician in this third level public health institution, in the Adult ICU, the Surgical Ward or the Surgical Room, and that they signed the Free and Informed Consent form for this research. The exclusion criteria included professionals who were on vacation and/or leave during the period of data collection (January to March 2016).

The sample was achieved through saturation, that is, as soon as the inclusion of new participants stopped adding new information and became redundant and repetitive, it was stopped, and further collection was deemed irrelevant⁶.

10 interviews were scheduled and conducted individually in an appropriate room that was available at GH-UFTM. The interviews were recorded with the help of a cell phone, with the permissions of the participants. The interviews were transcribed in full and verified twice by two different researchers to ensure reliability; a semi-structured script was used with the guiding question: "Describe holistically the performance of caring for burned patients. A demographic questionnaire was used for collecting data related to age, gender, the ward in which the participant works, how long have they been practicing nursing and questions regarding the care for burned patients.

Collected data was analyzed through thematic analysis, a form of content analysis consisting of identifying axis of meaning present in a discourse. The verification of these axis is define found according to the presence and frequency of them, and of their

articulation with the objectives of the research.

The analysis took place in three stages: the first was the reading of the material, enabling the correction of interpretative paths or the emergence of new inquiries; the second stage involved the exploration of the material, as well as the search for categories; in the third stage, the results obtained are discussed, based on theoretical frameworks⁷.

The research project was approved by the Ethics Committee of the Federal University of the Triângulo Mineiro (CEP/UFTM), under protocol 1.193.249 of 2015. To ensure the anonymity of the survey participants, they were designated by names of flowers.

RESULTS

Ten health professionals participated in the study. Among the respondents, five were nurses and five nursing technicians. Among the nurses, four were female, and one male. They were aged between 29 and 50 years, had been working as nurses for six to thirty years and their experience in the care of burned people varied from two months to thirteen years.

Among the nursing technicians, four were female and one was male, and their age ranged from 25 to 46 years. They had been practicing the profession from five to twenty years, and their experience in the care of burned people varied from one year and six months to twenty years.

After the transcript of the interviews, the organization and a thematic analysis of the material, four categories emerged: a) General care with the patient; b) Humanization of care; c) Knowledge of nursing professionals during the bath; d) Knowledge of nursing professionals during the dressing of injuries.

Thus, in the category "general care with the patient", the following subcategories were created: 1) Water balance; 2) Central access in patients with large and/or upper limb burns; 3) Reverse isolation; 4) Personal Protective Equipment (PPE) use; 5) sterile sheets use; 6) replacement of fixations; 7) position changes.

The replacement of blood volume as well as the maintaining of water balance are important types of care to be offered to burned patients:

During the day we observe too, because bodily fluids are lost through the lesions, and we try to stay aware of when it comes to diuresis, because usually these burned patients they come with vesical delay probes, so we quantify the diuresis of these patients, verify their water balance, see how much is entering and how much is coming out. If the patient is conscious, attentive, wandering, we quantify it using an open urine collector. (Daisy)

The patient in the early days of burning usually loses a lot of fluid, you have to pay attention to diuresis. The patient loses a lot of fluids, usually it's important to care for their hydration, to be mindful of diuresis, of the water balance. (Jasmine)

It can be seen in the reports below that, when the burned patient is attended for the first time, the main objectives of the health professionals are to keep their airways permeable, as well as a large or central venous access.

We have a special type of care with these patients because generally when they're burned they need to have a central access. (Tulip)

Burned patients are very difficult, especially in the upper limbs with peripheral access, so they usually have a central access (...). (Azalea)

There is a preoccupation to protect the hospitalized burned patients from possible infections, and so, reverse isolation is used, as well as PPEs and sterile sheets:

First, we admit the patient in isolation, or put them in a separated room, and we already identify that it's a reverse patient. Whenever the patient is manipulated, we use PPE's, especially during bathing and dressing. (Orchid)

All the sheets used in burned patients are sterile for their protection (a). Sheets to line the bed, to cover the patient and dry them in bath. (Dahlia)

Thus, as is done with all hospitalized patients, the exchange of fixations in burned patients is always performed after bath, guaranteeing a more hygienic process and well-being to the patient:

Done that, after the bath, we swap all the fixations that we usually done with all the patients, with burned patients they don't change. (Dahlia)

After the bath is finished, all fixations are switched. (Peony)

Another action performed by the nursing team regarding the burned patient is the change of position, to avoid pressure lesions, as can be observed in the report below:

After the bath, protocol dictates that we change them from one side to the other so they don't have bedsores, right. (Jasmine)

In the category Humanization of Care, it was found that a burned person needs humanized care, and that makes it necessary for the nursing team to seek the well-being of the patient considered as a whole, including both their physical and psychological health. Thus, in this axis of meaning, the following subcategories arose: 1) analgesia and/or sedation during bath and dressing; 2) daily psychological accompaniment; 3) presence of visitors.

It was found in these reports that diminishing the pain felt by the burned person during bath and injury dressing is an important type of humanized care, and therefore, analgesia and/or sedation happens at this point:

During the bath of the burned analgesia is conducted because it is a very painful procedure. Analgesia here is made with morphine, methadone, and other analgesics that we have here in the ward, such as dipyrone and tramadol. (Azalea)

The patient, if he is already sedated, he continues to be, if he is not sedated, he is superficial, only with analgesics, and the physician increases this analgesia. (Azalea)

The daily psychological follow-up, in this case conducted by the psychology professional who is part of the multiprofessional team of the GH-UFTM, assists in the treatment of the burned patient, contributing to offer an integral care:

We take care of their psyches, there's a follow-up, we have a psychologist here in the ward and she follows-up with the patient every day. (Daisy)

The psychologist comes to talk to them, they open up, they cry, talk about family, so that's part of their care, too. (Tulip)

Through these lines it can be noted that in the hospital there is a multiprofessional teamwork, and they rely on the support of the psychology professional to assist in treating the burned patient, which contributes to an integral care.

In the answers below, the permanence of a family member or other carer of the burned person is shown to be very important during hospitalization:

When the burned patients are admitted in the ward, we try to leave a companion with them right, a family companion right, because that also affects a lot the psyche of the patient. (Rose)

I usually authorize a companion to stay with these patients here in the ward, because a hospitalization because of burns affects them a lot, their self-esteem. So this contributes to their psyche, the authorization of a companion. (Azalea)

The category "knowledge of nursing professionals during bath" includes an understanding that the baths of burned patients are complex procedures, that require qualified and humanized professionals, since, in this moment, the patients feel pain. Thus, in this axis, the following subcategories were listed: 1) sterile technique; 2) presence of the physician and nursing staff; 3) bath duration; 4) drying the patient with sterile sheets.

The bath is a procedure conducted with sterile technique:

The bath technique is totally sterile, usually involves a physician, a nurse, and a nursing technician, and another technician stays close in case they need to fetch something. (Peony)

The bath in the unit is carried out along with the injury dressing using a fully aseptic technique. (Azalea)

It can be seen in the reports of the respondents that the bath is carried out aseptically, with a sterile technique, aiming to protect the burned person from possible infections.

The bath is a complex and time-consuming procedure, its conducted with the presence of the physician, the nurse and the nursing technicians. Time spent depends greatly on the severity of the case, the degree of the burns and their extent:

The bath is done with sterile technique, and Personal Protective Equipment (PPE's). The physician, the nurse and the technicians are present". (Rosa)

The bath of the burned patient is a long bath, about an hour, it requires the nursing team and a physician, usually the plastic surgery resident. (Dahlia)

Aiming to continue a sterile procedure after bath, the person is involved with a sterile sheet, thus being protected of as many infections as possible:

Afterwards they are dried, with a sterile sheet, and we help there too. And then the dressings begin. Normally we use papain depending on the location, we use sterile bandages, everything sterile. After the patient's bath we lay the bed with sterile sheets too, these sheets are made available to us every day. (Orchid)

After bathing, the patient is dried with the use of a sheet, a sterile sheet, right, to keep the aseptic bath technique. (Jasmine)

In the category "Knowledge of nursing professionals about dressings", it can be seen that the professionals need broad knowledge

to establish the proper conduct regarding the dressings of burned people. Therefore, in this category, the following subcategories were listed: 1) dressing made by the physician and the nurse; 2) sterile technique; 3) actions of nursing technicians during the dressing; 4) papain is used in places with decaying and/or necrotic tissue; 5) silver sulfadiazine is used in granulation tissue; 6) essential fatty acids (EFA) are used in the intact skin; 7) fibers and EFA are used on the face; 8) occlusive dressings.

The sterile dressing technique in the GH-UFTM is conducted by the physician and by the nursing team, which can be seen in the responses below:

The dressing is done in the morning shift, by the plastic surgery resident and the nurse, aided by the technicians. (Daisy)

The dressing is made with an aseptic technique, with PPE's, sterile material, using a sterile glove. (Dahlia)

Before and during the dressing, nursing technicians are responsible for fetching needed material, preparing and organizing, as can be noted in the following statements:

Nursing technicians are in charge of preparing and organizing the material. Which includes: sterile sheets, a prepared kit containing sterile gowns, sterile cloth, sterile basin, heated distilled water in a recipient a with lamp, degerming chlorhexidine, ointments - usually 3%, 6%, and 10% papain, silver sulfadiazine, fibrase with chloramphenicol, sterile bandages, sterile compress bandages. (Jasmine)

At that moment, nursing technicians prepare the material. Sterile sheets, complete kit in the right place, the most used ointments that are 3%, 6%, 10% papain, silver sulfadiazine, fibrase and EFA. They separate the sterile bandages, sterile compress bandages, I guess that's it. (Lily)

The papain is commonly used in decaying and/or necrotic tissues:

You have to evaluate the ointment like, because at first when the patient arrives theres no fibrin or necrotic tissue right, so we use silver sulfadiazine, which is and antibiotic, and when we have it, fibrin tissue and necrosis start to appear and you use 10% papain in these spots. (Violet)

(...) When the patient is like that in stage with more fibrin, then, depending on the evaluation of the resident, we use 3%, 10%, 6% papain. (Jasmine)

The sulfadiazine ointment is used in granulation tissue, as can be noted in the following reports:

If it's granulation tissue we use sulfadiazine, but that's a medical prescription, not a nursing prescription. The medications are medical prescriptions. (Tulip)

When there's granulation tissue, we use silver sulfadiazine. (Violet)

In the statements below it can be observed that essential fatty acids (EFA) hydrate and protect the skin, and are thus applied on intact skin:

(...) and in the body in the intact skin EFA is used to protect the skin right. (Dahlia)

(...) but on the intact skin we use EFA to moisturize the skin. (Rose)

When dressings are made in a spot with necrotic tissue, it is important to check how deep is the necrosis, so that through that nursing evaluation the best conduct can be decided:

(...) and if there's necrosis you have to analyze its depth, because if it reaches a tendon, you won't apply papain. But if there's a spot of necrosis, it's usually papain 10%. (Orchid)

You have to check how deep it is when there's necrosis, because depending on the depth you don't use papain. In the tendons, for example, we cannot use the papain. (Daisy)

When there are burns on the face, fibrase and/or EFA are commonly used:

Since the the face is a more delicate part normally we use the fibrase, but it's also usually as a prescription, in the intact skin the EFA is used to protect the skin (Tulip)

(...) in the face we always use fibrase, because you cannot use papain on the face. So even if there's necrosis on the face you don't use papain, just fibrase. (Peony)

In other regions of the body, occluding dressings are used, order to protect the wound:

You cover the place where the wound is with sterile compress gauze and cover it with bandages, and so the bandages are passed under the patient, and are sterile bandages right. You bandage so the dressing is occlusive right, it doesn't come off. (Jasmine)

In burns we always do occluding dressings, we apply the ointments and bandages. You don't do an occlusive dressing only on the genitals or in the face. (Rose)

When the lesion is decaying too much, wound debriding is conducted in the surgical ward.

When fibrin is too extense, then usually the patient goes to surgery to debride, because papain can't do its job and so the guys from plastic do the debriding. (Dhalia)

DISCUSSION

The general care category discusses that one of the types of care conducted by the nursing

team right after the patient is admitted is puncturing a high caliber venous access⁸.

According to the reports of nursing professionals, as soon as the patient is admitted, a central venous access is punctured. When its possible, the peripheral venous access is punctured, but in the presence of upper limb burns, this access is unavailable, and most times the central access is chosen. The water balance represents the monitoring of fluids administered and eliminated by the patient in the hospital. Thus, involving liquid replacement, the water balance is a paramount type of care for burned patients⁹.

Due to the injuries caused by burns, it is necessary to monitor respiratory patterns, liquid replacement, signs of infection, performing physical examinations, pain control, psychological support, nutritional support, to give the patient attention adapted to their needs through a multiprofessional approach⁵.

It is important to carry out physical examinations and give nutritional support in the care of the burned patient⁵, but the participants did not mentioned those.

Patients who suffer burns present intense pain and emotional shock. These factors may hinder their evolution during hospitalization. Therefore, knowing the etiology of the burn is important in order to choose the therapeutic treatment, and direct the work of the nursing team in the best way possible⁹.

There is evidence that the improvement of the patient's pain situation is related to the way in which these professionals account for pain⁸. This information is found in the statements of the respondents, aimed at the humanization of care through pharmacological therapy and sheltering. In this regard, it is essential that nursing professionals evaluate the pain of the patient, do minimize the intensity of this sensation¹⁰. However, it was not pointed out by the researchers the way in which nursing professionals assess the pain of the patients.

Image disorder disturbances of burned patients is another important aspect. Generally, these patients have low self-

esteem, fear concerning to the future and their bodily disfigurement. The nursing staff should be attentive and clarify the doubts of these patients, besides offering emotional support, which contributes to the integrality of care^{9,11}.

The participation of the multiprofessional team is essential to offer integral care. The presence of a psychology professional, for instance, that can work with the patients on their ability of emotional regulation. This professional was cited in the interviews as essential in the treatment of burned patients.

In the categories of nursing care during bath and dressing, the participants discussed the importance of using prevention and control methods of hospital infections. Burns are known to provoke epithelial tissue traumas, leading to the destruction of the protective skin barrier. That can lead to infections, and one of the ways to prevent that from happening is the use of PPE's, as well as of aseptic techniques during procedures^{8,12}.

Burned patients are prone to hospital infections due to the loss of the protective skin barrier, and so, reverse isolation is used¹³. This type of isolation is a hospital room designed to protect an immunocompromised patient from possible infections. A private room and the use of PPE's such as procedure gloves, common masks and long gowns are needed¹⁰. In order to promote the well-being of the patient and prevent pressure lesions, the nursing team changes the position of the patients every two hours, according to the GH-UFTM protocol from 2010¹¹.

In decaying and/or necrotic tissues, a topical agent called papin is used to promote chemical debriding and acts as a local antibiotic in the bacterial walls. In summation, it is used to treat the burns, and has a broad antibacterial spectrum¹⁴. However, papain is not used in face burns, even if there is necrotic tissue. The situation is evaluated and, if necessary fibrase is used and the intact parts of the skin are hydrated with EFA^{12,15}.

Respondents reported that, when dressing the burn wounds, they use 1% silver sulfadiazine, a topic ointment used in superficial or deep burns, that acts in granulation tissues, against gram negative and

gram positive bacteria, as well as fungae¹⁶. However, scientific literature says that this substance damages the granulation tissue, and the most commonly used is papain^{4,17}.

The disadvantage of papain is how long it lasts, demanding a more frequent substitution of dressings (12-24 hours). Depending on the amount of exuding, the risk of hospital infections increase, not to mention the discomfort the pain provokes in the patient¹².

Other topic substances can be used in the dressing of patients who have suffered burns, such as: nanocrystalline silver dressings and the Acticoat Flex. The first one allows the growth of an antimicrobial barrier and helps to decrease the amount of dressing exchanges. Its advantage in comparison to 1% sulfadiazine 1% is that it lasts for a longer period¹⁸. This topic substance was not quoted.

The Acticoat Flex is made of nanocrystalline silver, a flexible polyester mesh, which makes it possible to diminish the number of dressing changes, decreasing local trauma and pain to the patient, since it maintains a continuous release of the broad spectrum antimicrobial active nanocrystalline silver for at least three days (Actiocat Flex 3) or seven days (Acticoat Flex 7)¹⁹.

The downside of using Acticoat Flex is the high cost, compared to other usual topic substances such as silver sulfadiazine. However, when correctly prescript, its cost becomes lower, due to a lesser frequency of dressing exchange, and the number of hospitalization days¹⁸. Therefore, the quality of this treatment option is emphasized, as well as the implementation of protocols for more advanced coverage.

CONCLUSION

It can be concluded that the nursing professionals are concerned in acting as to offer integral therapeutic care to the patients, through aseptic techniques and the use of PPE's to prevent against grievances. Also offering emotional support through sheltering and multiprofessional work. All these aspects aid in the mitigation of pain and clinical complications.

This study enabled the acquisition of knowledge in the provision of assistance to the burned patient. At the same time, it showed how important it is that the nurse keeps up to date with scientific knowledge, in order to offer a proper assistance to the patients. Besides the care offered by the nursing team to the burned patient, the actions of the multiprofessional team are paramount to guarantee the offering of an integral care, such as observed in this study.

The need of elaboration and disseminating new studies involving this theme stands out, as a way to improve the nursing teams that work with burned patients.

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CONTRIBUTIONS

Isabela Lacerda Rodrigues da Cunha took part in the conception, design, analysis and data collection, as well as their interpretation and writing. **Lúcia Aparecida Ferreira** took part in the conception, design, analysis, data interpretation, writing and critical reviews and **José Henrique da Silva Cunha** took part in the analysis, interpretation of data and writing.

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